

BRYCE CANYON NATIONAL PARK

TRAILS MANAGEMENT PLAN

DRAFT

NATIONAL PARK SERVICE

DEPARTMENT OF THE INTERIOR

Prepared by: _____
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Chief of Maintenance

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PART I INTRODUCTION

Trails provide convenient access to front-country and backcountry areas for most of the park's users. The location length, and attractions along the trail, as well as its standard of maintenance, affect the amount of public use each trail receives. The degree of public use in turn affects human impacts upon the resources. All trails are placed in one of several maintenance categories based on the level of public use and the need to preserve resources and standard of maintenance. These categories are defined in the *NPS TRAILS MANAGEMENT HANDBOOK*.

Providing quality recreational opportunities while preserving the resource is the major trail management concern and challenge. Trails are in themselves resource management tools. They localize intensive use and can be used to funnel people through sensitive areas or direct them elsewhere. The following standards and guidelines were established to reflect the minimum necessary alteration to natural resources while providing access. Trail maintenance must be guided by a philosophy of resource management rather than facility management, for it is the resources which give the meaning to and justify the existence of a national park.

Trail Management Zones have been established for front and back-country management to meet the needs of a range of visitors with a broad range of needs—easy day-hike, accessibility, primitive wilderness, just to name a few.

The Trails Management Plan is a subsection of the Park Maintenance Management System and also serves as an operational appendix to the Backcountry Management Plan. It outlines policies and procedures for park management to implement service and park trail management guidelines. It is intended to be a plan of functional flexibility, providing direction where needed but allowing for necessary dynamism. It is a working guide for managers to implement a trails management program.

Objectives of the Trail Management Plan:

- Provide a standard of maintenance for park trails;
- Provide an inventory of park trails and define the range of visitor experience that is provided for by each;
- Outline and describe the park's trail maintenance program;
- Provide a description of the trail maintenance program that can be used by the Utah State Historic Preservation Officer and the NPS to prepare a programmatic memorandum of agreement and cultural resource compliance documents covering routine trail maintenance actions.
- Establish the use limits for front/backcountry areas;
- Develop/implement a research and monitoring program to mitigate trail/site impacts through restoration, rehabilitation, education, orientation, interpretation, and law enforcement.

***SEE REFERENCE – D. BRCA GENERAL MANAGEMENT PLAN
E. BRCA STATEMENT FOR MANAGEMENT**

PART II

TRAIL MANAGEMENT ZONES AND OBJECTIVES

Zones are established on the basis of visitor preference and their perceptions of wilderness quality and experience. The needs of all visitors cannot be met by managing all park lands in the same manner. Some visitors require the facilities and services found only in the front-country while others seek varying degrees of primitive wilderness character and opportunity for solitude. For this reason, in addition to the front-country zone, a backcountry zone has been established to ensure that visitors find their preferred opportunity and resource management objectives are met.

FRONTCOUNTRY ZONES:

ZONE I. VIEWPOINTS (Development Zone – 7% of park, 252 acres)

This zone includes all viewpoints, all walks to the viewpoints, all walks leading from parking areas to viewpoints, all walks or trails associated with campgrounds, amphitheaters, visitor centers, comfort stations, may include short sections of Zone II trailheads, and are intensively used. To the greatest extent possible, trails in this zone are maintained to provide optimum access and opportunity for special populations.

ZONE II. DAY USE TRAILS (Natural Environment Sub-zone - 37% of park, 13,325 acres)

These trails are designed for day use only. The trails in this zone are primarily located in the main amphitheater and consist of hiking and equestrian. These are very popular trails affording the visitor a degree of solitude and wilderness character of Bryce Canyon National Park. As supported by funding, trails are maintained to a degree that insures adequate resource protection and visitor safety during heavy use by the hiker and stock user. These trails are signed to a level that provides necessary visitor information.

BACKCOUNTRY ZONE:

ZONE III. (Wilderness Sub-zone – 62% of park, 22,325 acres)

This zone includes all trails associated with backpacking and backcountry camping. It includes all connecting trails and campsites. These trails are located between Bryce Point and Rainbow Point. These are popular trails offering excellent opportunities for solitude and primitive wilderness. Trails are not routinely maintained within this zone, therefore, visitors must accept travel on the terms of the terrain. Signing will be limited to trailheads, trail junctions, and campsites. Maintenance work will be limited to impact correction and localization work as supported by funding.

***SEE REFERENCE – D. BRCA GENERAL MANAGEMENT PLAN
K. BRCA DRAFT BACKCOUNTRY MANAGEMENT PLAN**

PART III

NPS TRAIL MAINTENANCE LEVELS AND TRAIL TYPES STANDARDS

The following are designated for programming purposes:

Maintenance Levels: The maintenance level assigned to a trail or walk depends on land management objectives, purpose of the trail, volume and type of traffic, existing trail standards, and funding availability. Maintenance levels are assigned to trails to define and predict the type, amount, and frequency of maintenance work required to ensure continued service of the resource to the extent required for the allowed use.

Each trail (or segment) should be assigned one of the following maintenance levels:

LEVEL 1 Level 1 walks are maintained for high use. These are the major park walks, usually accessing visitor facilities and other primary points of interest. Traffic is heavy. The tread is maintained at the highest standards. This level also includes handicap access walks. Level 1 trails require maximum maintenance.

LEVEL 2 These trails are maintained for concentrated use, at relatively high standards. Traffic is medium to heavy. The tread is maintained at a high standard for convenience and comfort. Level 2 trails require high maintenance.

LEVEL 3 Level 3 trails are maintained for intermediate use. Traffic is medium. Tread is maintained for user convenience. The trails are designed for any permitted mode of travel.. Level 3 trails require a medium amount of maintenance.

LEVEL 4 These trails are maintained for semi-primitive use. Traffic is low to medium. The tread is often not smooth, having a dirt and rock surface. Level 4 trails are maintained for either pedestrian or horse use. Less maintenance is required for level 4 trails than the preceding levels.

LEVEL 5 Level 5 trails are maintained for primitive use. Traffic is low. These foot trails require custodial care. Minimal maintenance is required.

Each trail (or segment) should be designed according to the following types:

TYPE A MAJOR TRAILS: Major trails are marked, improved and maintained for foot and/or horseback traffic. A major trail in the park usually accesses many of the main visitor attractions and serves as a terminus for minor or wilderness trails. These highly developed trails contain the necessary bridges, corduroy elements, drainage, and shelters where needed. Minimum tread width is usually 24 inches, and overall grade is less than 10%. For grade distances less than 150 feet, grade should not exceed 15%. Type A trails are to have first priority for maintenance.

TYPE B MINOR TRAILS: Minor trails are also marked, improved and maintained to accommodate foot and horseback traffic but contain an overall lower construction standard than type A trails. These trails serve special scenic areas and access points. The tread does not have to meet the maximum standard and may be limited to where the maximum is justified. The overall grade is less than 15%. For distances less than 150 feet, grade should not exceed 18%.

TYPE C WILDERNESS TRAILS: Wilderness trails are marked but are generally unimproved except for clearing and some work on dangerous areas. These trails are normally used by experienced wilderness trail users, for access to backcountry, campsites, and cross-country areas, for fire suppression, and for administrative purposes. Minimum tread width is 18 inches, with an overall grade less than 15%. For distances less than 150 feet, grade should not exceed 20%. Type C trails have the lowest maintenance priority except where safety is concerned.

TYPE D WALKS: Walks include sidewalks, boardwalks, gravel, shale, marl and bituminous trails that interconnect developed areas or serve as short scenic walks, and interpretive trails. These walks are normally for foot and wheelchair traffic and are usually built to high standards.

TYPE E OTHER: Other trails include snowshoe and x-country ski.

After the physical features of a trail have been inventoried and a maintenance level and the type of trail have been designated, the condition/corrective action surveys should be prepared. These surveys are vital to the maintenance process. Without them, trail maintenance decisions would be based on assumed data and guesswork.

TRAIL STANDARDS

SPECIFIC TO BRYCE CANYON

CONSTRUCTION / MAINTENANCE

The ideal trail is one that appears to have been in place a long time, with natural conditions prevailing along the sides and no signs of axe marks, freshly cut stumps, rock or debris piles, etc. Any limbs cut will be cut back flush with the tree trunk and painted, brush will be grubbed out and disposed of out of sight of the trail and scattered not stacked. Stumps will be cut flush with the earth and covered with dirt, no face cuts on logs crossing trails are permitted. Excess rock will be disposed of in the same manner as brush and limbs. Cut banks will be dressed up and where possible covered with natural topsoil taken from the trail tread. Should the need for blasting rock formations, stumps and log ends arise, the park will contact regional construction and safety offices to schedule a work detail of an N.P.S. blasting crew.

RESTORATION

In areas where a trail has been selected for closure or relocation, time will be taken to obliterate the trail and restore it to as natural condition as possible. The reasons being; it will avoid confusion and additional social trails, eliminate sources of erosion, and restore the area to a more natural appearance. Depending on the terrain, crews may use rock, brush, fallen timber and transplanting of live vegetation. In extreme cases it may require construction of temporary or permanent barriers or fencing.

There are sections of many trails that do not meet the standards listed below. In future maintenance actions, the following standards will apply.

<u>Standard Zones</u>	<u>Front-country Zones</u>	<u>Back-country</u>
Clearing	Horse – 8’ x 10’ max Foot - 4’ x 8’ max Brushing – all cuts flush Stumps will be flush cut and Covered with dirt. No face cuts on logs crossing Trails.	same same same
Tread	24” to 72” Bring tread to grade	18” to 36” same
Grade	4% to 18% <150’ – 15%> some trails exceed this standard as listed on inventory	to 15% <150’ – 20%
In-slope Out-slope	1% to 5% 1% to 2%	same same
Back-slope	maximum of : Earth – 45 degrees Cobble – 35 degrees	same same
Trail Shoulder (Berm)	Remove as required	same
Switchbacks	grade turnaround 6% Max: radius 4’ - 12’ Contoured to fit ground	same
Retaining Walls	minimum 25% slope	same
Water Bars	30 –45 degree angle With trail, frequency Determined by slope location And ability to divert away from Switchbacks etc.	same

Cont.

<u>Standard</u>	<u>Front-country Zones</u>	<u>Backcountry Zones</u>
Drainage Ditches	minimum for the volume Of normal water flow	same
Check Dams	used in wet drainages and / or Storm / run off drainages i.e.; Cooks ranch, New Horse Trail, Peek-A-Boo	same
Culverts	minimum for the volume of Normal water flow	same
Dips	6" – 8" below grade line 3% - 5% out-slope	same
Foot Bridges	To provide safe/convenient Passage across areas where Earthen trail construction Is impractical. Height above Stream bed will be determined By passage of water, flood Waters, ice and debris, each Side of the stream may require Cribbing. Materials: two or Three logs minimum diameter 20" Maximum length 24' (1/3 sawed Open face) with hand rails. 3' maximum tread.	same
Trail Marking Summer	signing: Each trailhead, Intersection and campsites.	same and cairns
Winter	add "area closed" signs; 2" x 2" square tubing at all view points snowshoe / x- country registration boards are located at Fairyland and Inspiration Trailheads.	only x-country snowshoe trails will be marked with 3' x 3" blue signs
Materials	Concealed source (see guidelines)	same

cont.

<u>Standard</u>	<u>Front-country Zones</u>	<u>Backcountry Zones</u>
Hitching Rails	3" welded steel tubing, 40" high, 8' in length, with 36" support posts on 4' center. (as these are scheduled for replacement, logs and rails will be used).	No horses/ hitching rails In backcountry (or proposed wilderness Areas)

****REFERENCE – A. NPS TRAIL MANAGEMENT HANDBOOK**

CONDITIONS / CORRECTIVE SURVEYS:

The trail log will be used as a working tool for the condition survey. Often the initial condition survey is performed at the same time the log is prepared. A condition survey identifies and documents the physical conditions of a trail including all structures and facilities and lists the deficiencies that will require maintenance efforts (see Trail Log and Condition Survey example).

Trails in a heavy use category require condition surveys annually or more often after heavy rainstorms, whereas those that receive less use may only require infrequent inspections. When identifying trail deficiencies, the maintenance objectives, maintenance levels, and operational status should be considered.

Generally performed at the same time as the condition survey, the corrective survey documents the maintenance activities required to remedy the deficiencies identified in the condition survey. This basic information, coupled with maintenance activity specifications, yields manpower, equipment, material costs, and scheduling data for maintenance work.

***SEE REFERENCE – A. NPS TRAIL MANAGEMENT HANDBOOK
M. BRCA SIGN MANAGEMENT PLAN**

TRAIL LOG AND CONDITION / CORRECTION SURVEY

BRYCE CANYON NATIONAL PARK

TRAIL NAME: _____

FRONT COUNTRY: _____ **BACK COUNTRY:** _____ **PAGE:** _____ **OF** _____

MAINTENANCE LEVEL: _____ **TYPE:** _____

LOGGED BY: _____ **SURVEYED BY:** _____

DATE: _____ **DATE:** _____

FEATURE AND LOCATION	CONDITION ASSESSMENT	CORRECTION NEEDED	LABOR, MTL'S & EQUIP NEEDED
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PART IV

BRCA TRAIL INVENTORY

FRONTCOUNTRY ZONES:

ZONE I – VIEWPOINTS: OPTIMUM ACCESS/ SURFACED – TYPE D LEVEL 1

FAIRYLAND POINT	NATURAL BRIDGE OVERLOOK
SUNRISE POINT	PONDEROSA CANYON OVERLOOK
SUNSET POINT	AGUA CANYON OVERLOOK
INSPIRATION (lower overlook)	YOVIMPA POINT
BRYCE POINT (lower overlook)	RAINBOW POINT
PARIA VIEW (upper overlook)	FARVIEW POINT

VISITOR CENTER WALKS

HISTORIC DISTRICT (Nature Center, Camper-store walks)

SUNSET CAMPGROUND (A Loop comfort station, sites #223, 224, & group site, and amphitheater walk)

(not maintained as accessible walks)

North Campground A, B C, D, comfort stations or walks.

Sunset Campground B, C, comfort stations or walks.

Walk immediately leaving back of lodge to rim.

ZONE II – DAY USE TRAILS

TYPE A LEVEL 2:

MOSSY CAVE	HWY. 12 TO MOSSY CAVE	.4 MI.
COOKS RANCH	HORSE TRAIL TO PARK BOUNDARY	1.7 MI.
RIM TRAIL	FAIRYLAND TO BRYCE PT.	5.4 MI.
QUEENS GARDEN	SUNRISE PT. TO QUEEN VICTORIA	.9 MI.
NAVAJO	NAVAJO LOOP	1.3 MI.
PEEK-A-BOO	PEEK-A-BOO-LOOP	3.0 MI.
BRISTLECONE LOOP	FROM RAINBOW PT.	1.0 MI.
ACCESSIBLE TRAIL	SUNRISE RIM TO HORSE TRAIL	.1 MI.

TYPE A LEVEL 3:

FAIRYLAND	FAIRYLAND PT. TO RIM TRAIL	5.4 MI.
Connecting trails:		
NAVAJO / PEEK-A-BOO	NAVAJO LOOP TO PEEK-A-BOO LOOP	.25 MI.
NAVAJO / QUEENS	NAVAJO LOOP TO QUEENS	.75 MI.
BRYCE PT. / PEEK-A-BOO	BRYCE PT. TO PEEK-A-BOO	1.0 MI.
TOWER BRIDGE	FAIRYLAND LOOP TO TOWER BRIDGE	.4 MI.

TYPE A LEVEL 4:

Horse trails:

HORSE TRAIL	SUNRISE PT. TO COOK RANCH TRAIL	1.7 MI.
HORSE SPUR LOOP (new)	SPUR FROM LOOP	.7 MI.

ZONE III BACKCOUNTRY

TYPE C LEVEL 5:

UNDER THE RIM	BRYCE PT. TO RAINOW PT.	23 MI.
RIGGS SPRINGS LOOP	RAINBOW PT. TO YOVIMPA PT.	8.7 MI.
Connecting Trails:		
SHEEP CREEK	SWAMP CANYON TO BOUNDARY	3 MI.
SWAMP CANYON	SWAMP CANYON TO UNDER THE RIM	1 MI.
AGUA CANYON	PONDEROSA PT. TO UNDER THE RIM	1.6 MI.
WHITEMAN	WHITEMAN TRAILHEAD TO UNDER RIM	.9 MI.

***SEE APPENDICES –** AA. BRYCE CANYON HIKING MAP (BCNHA – 1993)
CC. BRCA “OFFICIAL MAP AND GUIDE” 1993
GG. TRAILHEAD INVENTORY

PART V
BACKCOUNTRY TRAILS

A. USE LIMITS: Use limits in all areas are maintained by “Backcountry Use Permit” through the Ranger Activities Division. Campers are required to identify the use-area in which they will camp each night and will be free to choose a campsite consistent with low impact camping guidelines. Use levels will be based not on the total number of persons within the use-area or at a designated campsite but instead on the number of individual parties (defined as one through six persons per campsite or 15 persons per group site) allowed to camp in a use-area per night. The party system is intended to minimize the extent of environmental impacts in campsite areas since people in a party usually camp as a unit, cook together, etc., while the same number of persons camped as individuals in the same areas will attempt to maximize distance between their campsites, thus extending the camp perimeter.

B. DESIGNATED CAMPSITES: Bryce Canyon National Park maintains a number of primitive backcountry campsites. Nine campsites and two group sites are located along the Under The Rim Trail. Campsites:

Right Fork Yellow Creek
Yellow Creek
Sheep Creek
Right Fork Swamp Canyon
Natural Bridge
Corral Hollow
Riggs Springs

Group sites: Yellow Creed and Riggs Springs.

Backcountry camping is restricted to areas within 50 yards of backcountry campsite signs.

C. MOTORIZED VEHICLE USE: Motorized land vehicles are prohibited except where designated and for administrative purposes including search and rescue, as well as trail and facility maintenance. Park employees will accomplish necessary wilderness management work with the “minimum Tool”. See appendix V

D. CAMPFIRES: No open fires are permitted in the backcountry. Only backpacking stoves are allowed. When conditions of high wildfire dangers are reached within the park all fires may be prohibited.

E. SANITATION: Backcountry visitors / campers are required to carry out all litter resulting from their backcountry activities. Disposal of litter in the backcountry is prohibited. No toilet facilities are provided in the backcountry. Use will be limited to the capability of the environment to assimilate human waste. Waste will be buried 4-6 inches deep and at least 200 feet from water sources, trails or campsites.

F. HORSE AND PACK ANIMALS: The use of horses and / or pack animals is permitted along the established historic cattle drive routes in Little Henderson, Tropic, and Sheep Creek canyons during the spring and fall to move cattle across park lands. This activity is limited to day use only.

G. PETS: Pets are not allowed in the backcountry or on any trails in the park, the only exception is the paved trail between Sunrise and Sunset Points and pets must be leashed.

H. USE PERMIT SYSTEM: The “USE PERMIT SYSTEM” is designed to regulate, distribute, and monitor backcountry use. Regulation of backcountry use is essential for the protection of park resources and to ensure that a variety of backcountry experiences are available to the visitor. The USE PERMIT also provides basic information about the extent and intensity of backcountry use. The USE PERMIT SYSTEM administered through the Ranger Activities Division applies to all overnight use in the backcountry including, camping, hiking, snow-shoeing, and cross country ski trips.

***SEE REFERENCE -**

- D. BRCA GENERAL MANAGEMENT PLAN
- E. BRCA STATEMENT FOR MANAGEMENT
- H. BRCA “BACKCOUNTRY USE PERMIT SYSTEM”
- K. BRCA DRAFT BACKCOUNTRY MANAGEMENT PLAN

APPENDICES --

- AA. BRYCE CANYON HIKING MAP (BCNHA – 1993)
- BB. BRCA “BACKCOUNTRY HIKING AND CAMPING” BROCHURE
- CC. BRCA “OFFICIAL MAP AND GUIDE” 1993
- FF. TRAIL SIGN INVENTORY
- HH. SPRING INVENTORY

PART VI

RESPONSIBILITIES

Although all park divisions share responsibility in front and backcountry management, major responsibility rests with the Ranger Activities, Resource Management, Interpretation and Maintenance Divisions. For successful front and backcountry management, coordination of activities between these division chiefs must be maintained. To facilitate and ensure interdivisional coordination and communication, the plan requires that the Superintendent be informed of any construction, rehabilitation, or trail work activities intended for all trails / areas. Specifically, the Superintendent will be informed by the appropriate Concessions, Interpretation, Ranger Activities, Resource Management, or Maintenance staff member of potential esthetics, visitor use, safety, and resource impacts that may result from the proposed activity.

TRAIL PROJECTS THAT WILL BE EVALUATED BY DIVISION CHIEFS INCLUDE:

- Construction of new trails and realignment of damaged trails will be performed only with approval of the Superintendent.
- Any realignment where safety concerns exist (i.e., major rock slides, mud slides, flooding, undermining, and tree hazard)
- Construction of any new bridges or major drainage structures
- Removal or use of any live trees
- Approval of any source of material from outside BRCA boundaries to avoid introduction of exotic plant species
- Approval of any other than emergency blasting
- Approval and guidelines for use of any barrow sites
- Surfacing or major reconstruction work on any trails

TRAIL SUPERVISOR: It is the Trail Supervisor's responsibility to bring any unusual trail problems to the attention of BRCA Division Chiefs through the R&T Foreman and Chief of Maintenance. Depending on the situation, site visits or photographs will be used to illustrate the problem. Major project planning will be approved by Division Chiefs and Superintendent by November 15 of the previous year and included in the Maintenance budget programming process.

BACKCOUNTRY DISTRICT RANGER: The District Ranger in coordination with the Trail Supervisor and Roads and Trails Foreman, will collectively make recommendations to the BRCA Division Chiefs on trail concerns such as reroutes, sources of materials, construction, etc. relating to Backcountry trails.

RANGER ACTIVITIES: The Chief Ranger is responsible for the on going management of visitor use in the front and backcountry. This includes law enforcement, visitor education, some maintenance, and all protection functions including, search and rescue, wild land fire suppression, signing (except sign construction) and emergency medical response. In some cases Protection Rangers, Interpretive Rangers and Maintenance staff will carry out resource management activities which have been planned and are directed by the Resource Management Division. The Chief Ranger is responsible for making recommendations for the update and revision of the Backcountry Plan.

RESOURCE MANAGEMENT: The Resource Management Division is responsible for the design and direction of resource management programs within the front and backcountry zones. The Resource Management Division will act in an advisory capacity on matters such as environmental compliance, site rehabilitation and restoration, cultural resource preservation, and the establishment of front and backcountry use limits. This division will oversee the **TRAILS**

MANAGEMENT PLAN'S, monitoring and research program to ensure the intent of the program is carried out. It is also responsible for the organization, analysis, and effective application of monitoring results.

MAINTENANCE: Front and backcountry maintenance is a shared responsibility between the Chief of Maintenance and The Chief Ranger. Specifically, the Chief of Maintenance is responsible for maintaining all structures, utilities, pipelines, trails / walks, sign construction, and operation of waste disposal systems. The Chief Ranger is responsible for backcountry campsite maintenance, sign maintenance, and minor trail maintenance. The Chief ranger will evaluate backcountry facilities and trails and recommend improvements or possible changes to the Chief of Maintenance.

INTERPRETATION: The Interpretation Division is responsible for the development of all written materials pertaining to front and backcountry use (including general information on backcountry ethics and specific information on BRCA backcountry trail system, regulations and safety issues) for distribution to potential hikers. This process requires close coordination with other divisions to ensure that information is accurate, relevant, and in a format that results in the highest level of comprehension and compliance. The division also has primary responsibility for making one-on-one contact with hikers prior to and following their use of the front and backcountry in order to assist them in planning a safe and enjoyable experience, to verbally reinforce critical issues, to document use through the permit system and to receive feedback on front and backcountry conditions. This contact is critical to the overall success of the BRCA TRAILS MANAGEMENT PLAN.

***SEE REFERENCE -** D. BRCA GENERAL MANAGEMENT PLAN
E. BRCA STATEMENT FOR MANAGEMENT

PART VII

TRAIL MAINTENANCE AND CONSTRUCTION GUIDELINE (NPS TRAILS MANAGEMENT HANDBOOK)

Management objectives for trails are to:

1. give high priority to maintenance and reconstruction,
2. establish trail classification and maintenance standards,
3. classify all trails and routes within the park according to these standards, and
4. maintain all trails to these standards. The primary problems of the existing trail system are combined loss of tread resulting from intense visitor hiking, horse use, erosion, rock / mud slides, short cutting and adequate funding to perform required maintenance.

Park trail classification and maintenance standards will be recommended by the Trails Supervisor and R&T Foreman, and approved by the Superintendent. The Chief of Maintenance, R&T Foreman, and Backcountry District Ranger (as applicable to backcountry trails) will then determine the level of maintenance or reconstruction to bring trails up to standard. The Chief Ranger and Chief of Maintenance will evaluate and coordinate trail construction and maintenance activities within their respective divisions. The Chief of Interpretation will coordinate with subordinate supervisors and the parks Cooperating Natural History Association to ensure visitors / hikers are informed of work projects, schedules, or closures.

ALL PARK TRAIL REHABILITATION AND CONSTRUCTION PROJECTS WILL REFERENCE TO AND COMPLY WITH THE "NPS TRAILS MANAGEMENT HANDBOOK" AND SPECIFIC BRCA TRAIL STANDARDS. TRAILS MANAGEMENT HANDBOOK.

***SEE REFERENCE - A. NPS TRAIL MANAGEMENT HANDBOOK**

PART VIII

WINTER ACTIVITIES AND CLOSURES

Bryce Canyon winter months provide unique experiences to park users, not only for the scenery but also because of the lack of crowds.

FRONTCOUNTRY: Zone 1, Type A, LEVEL 2

Access roads, parking facilities, main walks and limited lengths of rim trails are kept plowed and sanded at the following locations:

VISITOR CENTER WALKS
SUNRISE POINT
SUNSET POINT
INSPIRATION POINT
(LOWER OVERLOOK)
FARVIEW POINT

NATURAL BRIDGE
PONDEROSA CANYON
AGUA CANYON
YOVIMPA POINT
RAINBOW POINT

X-COUNTRY SKI TRAILS: ZONE 1, TYPE E, LEVEL 5

The park offers above the rim Cross Country ski and Snowshoe Trails all of which are above the rim, ungrounded, and tracks may or may not be set. As winter snow depths reach 12" on the Fairyland, Bryce and Paria access road surfaces, these roads are closed to vehicle traffic and become X-country and snowshoe trails. The Protection Ranger Division is responsible for setting track.

FAIRYLAND TRAIL:

Access at USFS / NPS Boundary parking area 1.25 mi.

FAIRYLAND FOREST TRAIL:

Access from Fairyland Point .6 mi.

PARIA LOOP TRAIL:

Access from Inspiration Point Parking Area 3.5 mi.

BRYCE TRAIL:

Access of Bryce / Paria road junction 1.9 mi.

PARIA TRAIL:

Access at Bryce / Paria road junction 1.5 mi.

BACKCOUNTRY:

Although skiing is permitted anywhere in the park, visitors are informed that it is extremely dangerous to ski trails descending into the canyon due to slope steep-ness and avalanche conditions.

***SEE APPENDICES - CC.** BRCA "OFFICIAL MAP / GUIDE 1993

DD. BRYCE CANYON AREA, X-COUNTRY SKI TRAIL MAP
(RUBY'S INN)

PART IX

HORSE USE ON TRAILS

A. CONCESSION: Commercial stock use will be limited to the main corral, access trail, day use corral, Horse Trail, new loop trail, and Peek-A-Boo Loop Trail. Bryce / Zion Trail Rides currently has the contract for trail ride concessions. This contract outlines the responsibilities of the concessionaire for cleaning, draining, and upkeep of the trails they use. The concessionaire is responsible for maintaining the buildings, corrals, feed, and manure to avoid safety and health hazards, wildlife problems, or unacceptable esthetic impacts.

Prior to the start of each season, the Trail Supervisor and Concession Management Specialist will survey, with the concessionaire, the condition of trails that have been approved for their use, and document necessary maintenance and stabilization work to be performed by and at the expense of the concessionaire, or by park maintenance staff at the expense of the concessionaire. Any heavy equipment work will be performed by qualified park staff only.

B. PRIVATE: The use of horses and / or pack animals is permitted in the following areas:

On the established trail from the Mixing Circle to Sunrise Point;

From Sunrise Point down the "Horse Trail", the new "Spur Loop" Trail, to the Peek-A-Boo Loop Trail;

On the established "Cooks Ranch / Tropic Trail", from the park boundary to the Peek-A-Boo Loop Trail, on the Peek-A-Boo Loop Trail; and

Along established historic cattle drive routes in Little Henderson, Tropic, and Sheep Creek Canyons during the fall, only when herding cattle across park lands.

The use of stock is to be limited to day use only.

Loading or unloading of stock is allowed only at the Mixing Circle area.

Stock shall only be fed non-grain feed (pellets) or hay. All feeding of stock is to be done at the Mixing Circle.

THE FOLLOWING ARE PROHIBITED:

Riding or tying horses or pack animals in any developed areas such as the Visitor Center, Nature Center, campgrounds, or picnic areas. Tying horses or pack animals to trees or other plants. (Cross tie or use picket lines).

C. REDUCING CONFLICTS BETWEEN HIKERS AND HORSDEBACK RIDERS:

Park managers have become increasingly aware that the presence of horses on trails used by relatively high volumes of hikers often degrades the hiking experience. Three general alternatives to reduce or control the conflicts are:

1. to make no physical changes and to encourage the two user groups to be more tolerant of each other
2. to regulate volumes of use, usually by horses, and

3. to segregate the two user groups by means of separate trail systems. These alternatives are proposed, to varying extents, at different locations in the park.

In a few cases where conflicts are high and separation is not practicable, horse use monitoring is recommended. (The reduction or elimination of hiking on certain trails has not been recommended because hikers are by far the largest user group.) In cases where conflicts are low or moderate and no feasible solution is evident, mutual toleration is recommended.

SEPARATION OF USES:

Over time horseback riding has shifted away from areas with high hiking use. This trend reflects a long-term management response to a growing problem between user groups. Ultimately, separate trail systems for hiking and riding may be developed, as has happened on the “Horse Trail” and the new “Spur Loop”. The plan proposes separating user groups in certain limited areas of the park to eliminate conflicts. This recognizes that, even though horseback visitors are the minority, horseback riding is a well-established, traditional use of the park; therefore, it should be a respected mode of access with its own social values. If horse use is reduced in one part of the park, the National Park Service should determine if there are feasible and equitable means to increase horse use in another part as compensation.

***SEE REFERENCE – B. SUPERINTENDENTS COMPENDIUM
D. BRCA GENERAL MANAGEMENT PLAN
E. BRCA STATEMENT FOR MANAGEMENT**

PART X

BICYCLE USE

The use of a bicycle is prohibited in Bryce Canyon National Park except on park roads and parking areas, however, the Superintendent may close any road or parking area to bicycle use pursuant to Title 36, CFR

PART XI

PETS

No pets other than seeing-eye and hearing-ear dogs will be permitted in public buildings within the park. Pets are prohibited in all areas of the park except the paved trail between Sunrise and Sunset Points, and all pets must be leashed.

Pets are not allowed in the backcountry or on any under the rim trails in the park.

***SEE REFERENCE - B. SUPERINTENDENTS COMPENDIUM**

PART XII SIGNS

In front-country zones, signing may be used to provide a diversity of visitor information including, distances, special features, cautions, and resource management concerns.

For the backcountry zone, signs will be used at trailheads to provide backcountry regulations, minimum impact measures, and destination distances, at trail junctions, and campsites.

Recommendations for new signs by park staff must be submitted in written form and directed to the parks sign committee for review and recommendation to the Superintendent for approval.

METHODS AND MATERIALS:

RUSTIC SIGNS:

SIGN MATERIAL: Typical routed wood signs consist of 3"x12" clear heartwood, vertical grain redwood. Signs larger than 12 inches in face height are glued and doweled. Wood signs are recycled and planed down to no less than 1 5/8" thickness.

SIGN CONSTRUCTION: All signs have a 2" radius at all four corners. These corners are routed with a 3/8" quarter round bit, 1 inch past the radius. The remaining front edge is scalloped in either direction. The back edge is routed, with the same tool, in its entirety. Letters are routed to a depth of 3/16". There is a minimum 2 inch border between text and the edge of the sign. The entire sign is stained with a Mahogany Olympic Oil base stain. Letters are painted with white lacquer.

SIGN POSTS: Posts are peeled Utah Juniper, and stained with the same Mahogany Olympic stain. The post tops are rounded by hand to achieve the rustic appearance. The post is notched to the depth of one-half the thickness of the sign that it will accept. This notch will be a minimum of 1 inch, and a maximum of 2 inches deep. The top of the notch is located 2 1/2" to 3" down from the top of post. Signs are attached to the posts with 3/8" nuts and all-threads.

Sign posts are scaled to the size of each sign. For example, a 3 ft. x 7 ft. sign requires two 8 inch posts, a 2 ft. x 1 ft. sign requires one 5 inch post, a 6 ft. x 2 ft. sign requires two 6 inch posts.

***SEE REFERENCE -** A. NPS TRAIL MANAGEMENT HANDBOOK
C. NPS SIGN MANUAL
M. BRCA SIGN MANAGEMENT PLAN

APPENDIX - FF. BRCA TRAIL SIGN INVENTORY

MUTCD / TRAFFIC SIGNS

SIGN MATERIAL: Traffic regulatory, warning, and minor directional signs are of the MUTCD standard. All signs are the standard MUTCD colors and messages, or will be an approved equal. These signs will be on a standard .080 aluminum material, as provided from UNICOR – Federal Prison Industries. Sign backs will be painted NPS brown.

SIGN POSTS: MUTCD signs will be mounted on 2"x2" square 11 gauge galvanized posts. The posts will be painted the standard NPS brown. One and two post configurations will be used with these signs as required.

KIOSKS / BULLETIN BOARDS

RUSTIC BULLETIN BOARD: Bulletin boards are constructed with log uprights, framed board work, and shingled roofs. These are stained with a solid coat of Mahogany Olympic Oil base stain. Each board has two Plexiglas doors to cover registration slots.

SHUTTLE SYSTEM BOARDS: The shuttle system, operated by the park concessionaire is comprised of 14 to 16 shuttle stops and a main parking area near the entrance to the park. At each stop a shuttle system board will provide information to visitors as to their map location in the park and shuttle system, and the time schedule of the shuttles. This board will be of similar construction as the rustic bulletin board, without the roof (see detail drawing).

***SEE REFERENCE - A. NPS TRAIL MANAGEMENT HANDBOOK
C. NPS SIGN MANUAL**

APPENDIX - FF. BRCA TRAIL SIGN INVENTORY

(see manual for detail drawing behind page 28)

PART XIII

SAFETY

Because trail crews frequently work in isolated areas where medical facilities are not readily available and transportation of an injured person is often difficult and dangerous, safety is essential. A minor injury under the rim is magnified because of the time required to reach help, therefore, a major injury under the rim could become fatal.

GUIDANCE AND INSTRUCTION:

The National Park Service's "Safety Management Handbook" and the "Occupational Safety and Health Administration's" regulations and standards will be used as safe work practice guidelines. New employees will be given safety instructions and training to ensure they are skilled and physically able to competently perform the job and use all the tools required by the project.

Good safety practices demand that each crew member keep in good physical condition and maintain a high level of safety consciousness on the job. Each crew will be equipped with a complete first aid kit. Crew members will be encouraged to be current on first aid practices. The Trail Supervisor and / or primary crew leader will successfully complete a minimum of the American Red Cross First aid and Cardiopulmonary Resuscitation (CPR) courses before leading work crews on projects. Current certification will be maintained. All crews will be assigned radios to provide communication with park headquarters. Hard hats will be worn during tree cutting/ falling operations and at any time overhead danger is present. Safety glasses will be worn at all times while work is in progress.

***SEE REFERENCE - Q. BRCA LOSS CONTROL MANAGEMENT PLAN**

PART XIV

PATROLS, STAFFING, AND TRAINING

Successful implementation of the TRAILS MANAGEMENT PLAN requires visitor education, enforcement of regulations, and monitoring of visitor activities. Zones I and II trails / walks should be patrolled routinely during peak use periods and Zone III patrols will depend largely on the amount of use in the area.

Compliance with regulations will be achieved primarily through education and orientation efforts presented before the user enters the front or backcountry. Law enforcement contacts will be initiated at the lowest enforcement level possible and will be escalated only as each specific situation warrants.

Adequate visitor and resource protection activities depend upon adequate numbers and training of patrol, maintenance, and interpretive personnel. Specific training for seasonal employees will be scheduled annually in the spring. Emphasis will be placed on the resource management, law enforcement, interpretation, search and rescue, first aid, low impact camping, safety, concession management, wild-land fire control, and physical conditioning. An overnight field training workshop may be scheduled during the training session.

PART XV

INFORMATION, HIKER EDUCATION, AND ORIENTATION

Specifically, the Ranger Activities and Interpretation Divisions have the responsibility to provide printed information, educate, and orient potential hikers to elements of THE TRAILS MANAGEMENT PLAN, including the following:

Ease of access in the zone and area to be visited by the hiker, potential for party / patrol contact, and facility limitations. Overnight backcountry hikers will receive written information and a presentation on low impact camping and safety. Backcountry patrol rangers and interpreters will give educational talks as necessary to promote visitor safety and resource protection.

Interpretive signs will be restricted to the developed zones. Formal interpretive programs will be presented in the Front and Backcountry zones to enhance visitor understanding and appreciation of Bryce Canyon National Park. Informal interpretation may be provided in other use – areas as the need arises.

PART XVI

ENVIRONMENTAL PROTECTION, MONITORING, AND RESEARCH

CULTURAL AND HISTORIC RESOURCES: Sites in danger of disturbance by the inadvertent or deliberate activities of hikers are located throughout the park. Many archeological and historic sites in the park are subject to heavy visitation and will be monitored, evaluated, stabilized, and protected as necessary to preserve their values in compliance with mandates of the National Historic Preservation Act. Refer to the Natural and Cultural Resources Management Plan, Bryce Canyon National Park for specific actions regarding archeological and historic resources in the park.

WILDLIFE PROTECTION AND MANAGEMENT: In some backcountry areas visitor use activities will change the behavior, population levels and species diversity of canyon wildlife and hiking. Use in some backcountry areas may be restricted to prevent impacts to sensitive wildlife species such as the peregrine falcon. The magnitude and significance of these impacts will be addressed in the park's Backcountry Management Plan.

WATER QUALITY: The potential exists for localized contamination of backcountry water sources from human waste disposal and from natural causes. Leave no trace camping procedures are intended to prevent hazards to human health and the environment by ensuring the proper use of soaps, disposal of human waste, and purification of drinking water.

MONITORING AND RESEARCH: The front and backcountry resource monitoring program will concentrate on human use and its interrelationship with the surrounding ecosystem. Through the implementation of a monitoring and research program which addresses the following questions, management will be better able to provide for both visitor use of the front and backcountry and front and backcountry resource management:

What is the relationship between levels and patterns of visitor use and impact upon native vegetation, wildlife, soils, water sources, and cultural resources? How does visitor use relate to trail damage and erosion, campsites, proliferation, and other specified parameters within the front and backcountry?

What is the relationship between visitor satisfaction / expectation and levels of use, type of use (stock, day use, etc.), use distribution, visitor behavior, resource conditions, and management actions (regulations, use limits, patrols, development, etc.) ?

How is the backcountry experience affected by patterns and altitudes of private and commercial aircraft over the park?

Are the numbers, condition, and distribution of campsites in the backcountry acceptable?

What is the effect on park resources of management actions including site rehabilitation, trail work, use limits, campsite designation and zoning?

What effect do activities occurring outside the park boundaries, such as the proposed airport expansion and plateau development, have on Front / Backcountry resources and visitor use?

The results of the monitoring program will be incorporated into the TRAILS MANAGEMENT and BACKCOUNTRY MANAGEMENT PLANS through annual review.

The Resource Monitoring Program must be simple, efficient, and cost effective. It is anticipated that the bulk of the programs field work will be accomplished by Front and Backcountry District Ranger staff in cooperation with the Resource Management Division.

- *SEE REFERENCE -**
- D. BRCA GENERAL MANAGEMENT PLAN
 - E. BRCA STATEMENT FOR MANAGEMENT
 - K. BRCA DRAFT BACKCOUNTRY MANAGEMENT PLAN
 - P. BRCA CULTURAL / NATURAL
RESOURCES MANAGEMENT PLAN
 - R. NATURAL ENVIRONMENTAL POLICY ACT (NEPA)
 - S. NATIONAL HISTORIC PRESERVATION ACT
 - T. SECTION 404 OF CLEAN WATER ACT

PART XVI

PLAN REVIEW AND UPDATE

The life of this plan is anticipated to be at least five years. Plan review will take place on an annual basis after the effective date of the Plan, April 1994, and will include a meeting open to the public. Crucial elements of the plan for review include:

Zone classification standards as compared to actual field conditions, the necessity of site rehabilitation or closure, the backcountry reservation system, appropriate adjustments in area use limits, safety concerns, the accomplishment of identified responsibilities, the success of park division interface and communication, the effectiveness of on-going research and monitoring, public reaction and comment, the adequacy of current levels of front / backcountry maintenance, interpretive, and patrol staffing. The Superintendent is responsible for directing the annual review.

PART XVIII

RECOMMENDATIONS

1. Continually update the park's trail inventory, as well as trail maps.
The inventory will include:
 - A. All formal and social trails.
 - B. The zone and standard to which open trails are to be maintained.
 - C. The overall conditions of trail grade, width, tread, substance, and special problems.
 - D. Location and condition of bridges, railings, steps, chains, water collection systems, culverts, hitching racks and other constructed trail facilities, as well as their annual pre-season safety inspections.
 - E. Trails open to horse use.
 - F. Wilderness areas.
 - G. General range of annual use, including campers.
 - H. Current budget for maintenance.
 - I. List of park trailheads, principal trail and backcountry entry locations.
2. Establish a repeatable system of trail measurements (station markers).
3. Establish a test program for trail tread materials, coloration and texture. Aiming toward a standard in this area.
4. Document, map and evaluate sections of trail that need rehabilitation, redesign, formalizing or restoration.
5. Develop a trail log in accordance with the NPS Trails Management Handbook.
6. Annual review of the Standards and Guidelines to determine what, if any, revisions and additions are necessary to make this an effective, working document.
7. The Standard, Guidelines and Trail Inventory will be used in the budgeting process.
8. All trail work will be documented at the end of each season to be included in the inventory.
9. A Front and Backcountry sign inventory will be maintained and updated.

